

REMARKS

Claims 1, 4-6, 9-62 and 73 are pending in the instant application. Claims 22-57 have previously been withdrawn and claims 2, 3, 7, 8 and 63-72 have been previously canceled.

The Applicants thank the Examiner for the indication that claims 1, 4-6 and 9-21 are in condition for allowance.

Claim 58 has been amended. Support for the amendments to claim 58 may be found in FIGS. 1-6 and 12 and pages 9-14 of the application as originally filed. No new matter has been entered by this amendment.

Claims 58-62 stand rejected under 35 U.S.C. 112, first paragraph and claims 58-62 and 73 stand rejected under 35 U.S.C. § 103(a). Applicants respectfully traverse.

Rejections Under 35 USC § 112

Claims 58-62

Claims 58-62 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Examiner specifically states that the limitation “the V-shaped grooves being linked together” of claim 58 is unclear. Claims 59-62 stand rejected for their dependency on claim 58.

As stated in the previous response the limitation “V-shaped groove” refers to the reflection pattern formed on an upper surface of the protrusion part. When seen from a cross-sectional perspective, the reflection pattern appears to have a “V” shape, including a first light reflecting surface forming one branch of the V and a second light reflecting surface forming the other branch of the V. The limitation “the V-shaped grooves being linked together” simply indicates that one set of first and second light reflecting surfaces which constitute a V-shape are disposed adjacent to another set of first and second light reflecting surfaces which constitute another V-shape.

The Examiner has maintained the rejection, further suggesting that claim 58 be amended to include the limitation wherein each of the V-shaped grooves is disposed adjacent to another V-shaped groove. Applicants have amended claim 58 accordingly.

Therefore, it is respectfully requested the rejection to claim 58, including claims depending therefrom, i.e., claims 59-62 under § 112, second paragraph, be withdrawn.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 58-62 and 73

Claims 58-62 and 73 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Ryu et al. (U.S. Patent Publication No. 2002/0181223, hereinafter “Ryu”) in view of Ishikawa et al. (U.S. Patent No. 5,600,455, hereinafter “Ishikawa”). The Examiner states that Ryu discloses all of the elements of claims 58-60, 62 and 73 except, *the protrusion having grooves*, which the Examiner states is disclosed primarily in FIGS. 7 and 10 of Ishikawa. The Examiner states that Ryu further discloses all of the additional elements of claim 61 except, *the plurality of protrusions having substantially identical size being positioned with increasing density as a distance from the light incident surface increases*, which the Examiner further states “would have flown naturally to one of ordinary skill in the art at the time the invention was made”.

Ryu is directed to a light guide panel for a backlight. (See Abstract). Ryu discloses a side-lit light guide plate (“LGP”) 2 including a plurality of cells 21 having various configurations. (See FIGS. 7B). In the embodiments shown in FIGS. 4-6B the cell 21 is not a physical feature of the LGP, but rather represents a boundary for a collection of microcells 211-213. In the embodiment shown in FIGS. 7A and 7B, the cells 21 are physically present in that they represent an embossed area on the surface of the LGP. In FIGS. 7A-B each cell 21 forms a depression in the LGP and each cell 21 includes a plurality of microcells 214 and 215 which are raised or lowered from the bottom of the depressed cell 21. (See FIG. 7A-7B and paragraph 39).

Ryu fails to teach, suggest or disclose: **a protrusion part formed as a column shape on the first light emission surface, and a light reflection pattern formed on an upper surface of the protrusion part, for reflecting light toward the second light emission surface, the light reflection pattern having a cross-sectional profile of a plurality of V-shaped grooves** as claimed in independent claim 58.

The Examiner states that the cells 21 of Ryu constitute a plurality of protrusions formed on the first light emission surface. (See page 4 of the present Office action). However, the cells

21 do not constitute a protrusion part formed as a column shape on the first light emission surface as claimed. The cells 21 of FIGS. 4-6B are abstract boundary lines surrounding a plurality of microcells 211-213; the cells 21 do not protrude from the light emission surface, nor are they formed as a column shape on the light emission surface. The cells 21 of FIGS. 7A-B are in fact depressions in the material of the LGP. Therefore, the cells 21 of FIGS. 7A-B do not protrude from the LGP. (See particularly the inset magnified cross-sectional view provided in FIG. 7A). Furthermore, although not specifically alleged by the Examiner, the individual microcells 211-215 do not constitute a protrusion part formed in a column shape on the first light emission surface as each microcell 211-215 forms a cone shape. (See FIGS. 6A-7B).

Therefore, because Ryu does not disclose a protrusion part formed as a column shape on the first light emission surface as claimed, Ryu also does not disclose a light reflection pattern formed on an upper surface of said protrusion part. Furthermore, as admitted by the Examiner on page 5 of the present Office action, Ryu does not disclose any light reflection pattern having a cross-sectional profile of a plurality of V-shaped grooves.

Ryu also fails to teach, suggest or disclose: **a light guide plate including; a light incident surface for receiving light, and first and second light emission surfaces for emitting light, wherein the first emission surface includes a plurality of circular cylinder-shaped protrusions having grooves** as claimed in independent claim 73.

As discussed above in relation to independent claim 58, Ryu does not disclose a plurality of circular cylinder-shaped protrusions having grooves. The cells 21 are not protrusions, the microcells 211-215 are not circular cylinder-shaped, and neither the cells 21 nor the microcells 211-215 have grooves. (See FIGS. 4-7B).

Ishikawa is directed to a prismatic member with coarsened portions or triangular prismatic and semi-circular prismatic members arranged on a flat light emitting surface. (See Abstract). Ishikawa disclose a transparent member 1 disposed above a light guide plate 6. The transparent member 1 includes convex portions 10 and coarsened surfaces 11 disposed on the convex portions 10. (See FIGS. 7-10 and column 3, line 13 through column 4, line 15.)

Ishikawa fails to cure the deficiencies of Ryu as noted above, namely, Ishikawa does not teach, suggest or disclose: **a protrusion part formed as a column shape on the first light emission surface**, and **a light reflection pattern formed on an upper surface of the**

protrusion part, for reflecting light toward the second light emission surface, the light reflection pattern having a cross-sectional profile of a plurality of V-shaped grooves as claimed in independent claim 58.

Ishikawa does not teach a protrusion part anywhere on the surface of the light conducting member 6. The light conducting member 6 is clearly a light guide plate as known in the art as it guides light from the light sources 5 to be emitted in a planar direction to an outside. (See FIG. 10). Ishikawa also therefore does not teach a protrusion part formed in a column shape and a light reflection pattern in the form a plurality of V-shaped grooves formed on such a protrusion.

It is respectfully submitted that combination of Ryu and Ishikawa in fact teach away from the present application as Ishikawa discloses a separate transparent member 1 disposed **above** a light guide plate 3 having a diffusion plate 7 disposed therebetween, as illustrated in FIG. 10 of Ishikawa.

On the contrary, the present application discloses **a light guide plate** for maximizing the luminance on a display panel of an LCD device without increasing the number of components for the LCD device. (See page 3, lines 5-7 of the specification as originally filed.) Neither Ryu nor Ishikawa disclose a light guide plate having an emission surface as claimed in claim 58.

The light guide plate including a light reflection pattern in claim 58 of the present application designed for an edge type light guide reflects and refracts incident light in perpendicular direction toward an LCD panel to improve the brightness of the LCD panel. On the contrary, the coarse surface 11 on the prism of the transparent member 1 functions as light diffusing member to improve light uniformity coming from the underlying light conducting member 6. In addition, the coarsened surfaces 11 do not constitute grooves as claimed and described in the specification as filed, but rather a random pattern of removed material.

Applicants again assert that there would be no motivation to combine the transparent member 1 of Ishikawa with the light guide panel 2 of Ryu because they perform completely different functions within their respective backlight assemblies. The transparent member 1 of Ishikawa disperses light from a direct illumination source, e.g., the light guide plate 6, and the light guide plate 2 of Ryu reflects and refracts incident light in a perpendicular direction toward an LCD panel to improve brightness thereof. Neither reference suggests the combination of the coarsened surface 11 of Ishikawa with the cells 21 of Ryu. Therefore, any suggestion to

combine would be a result of improper hindsight.

However, even if combined neither Ryu nor Ishikawa alone or in combination disclose all of the elements of the claimed invention. Therefore, a prima facie case of obviousness does not exist.

Similarly, Ishikawa fails to cure the deficiencies of Ryu as noted above, namely, Ishikawa does not teach, suggest or disclose: **a light guide plate including; a light incident surface for receiving light, and first and second light emission surfaces for emitting light, wherein the first emission surface includes a plurality of circular cylinder-shaped protrusions having grooves** as claimed in independent claim 73.

As discussed above in relation to independent claim 58, Ishikawa does not disclose a plurality of circular cylinder-shaped protrusions having grooves.

Thus, Applicants submit that neither Ryu nor Ishikawa, alone or in combination, render obvious the subject matter of claims 58 and 73. Claims 59-62 depend directly or indirectly from claim 58, and thus include all of the limitations of claim 58. It is thus believed that the dependent claims are allowable for at least the reasons given for independent claim 58, which is believed to be allowable.

Accordingly, it is respectfully requested the rejection to claims 58-62 and 73 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicants' attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130.

Applicants hereby petition for any necessary extension of time required under 37 C.F.R. 1.136(a) or 1.136(b) which may be required for entry and consideration of the present Reply.

Respectfully submitted,

CANTOR COLBURN LLP

By: /John W. Stankiewicz/
James J. Merrick
Reg. No. 43, 801
John W. Stankiewicz
Reg. No. 60,169
Confirmation No. 4676
CANTOR COLBURN LLP
55 Griffin Road South
Bloomfield, CT 06002
Telephone (860) 286-2929
Facsimile (860) 286-0115

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